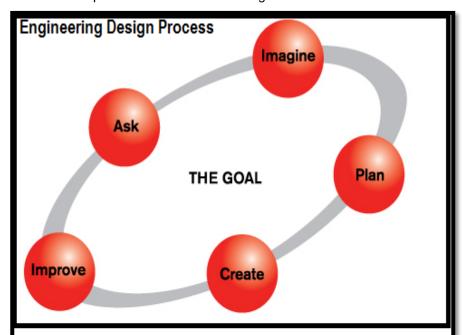Name: _____ Date: _____

Directions: On the back of this page, or on lined paper if you prefer, create a Double Bubble Map which compares and contrasts the steps of the Miss Kelly Problem Solving Process and the Engineering Design Process (which you experienced while solving the Bee Problem).   Be sure to include examples of when each model might be needed or useful.

Engineering Design Process

Imagine

Ask

THE GOAL

Plan

Improve

Create

ASK
What is the problem?   What have others done?   What are the constraints?

IMAGINE
What are some solutions?   Brainstorm ideas.   Choose the best one.

PLAN
Draw a diagram.   Make lists of materials you will need.

CREATE
Follow your plan and create it.   Test it out!

IMPROVE
Talk about what works, what doesn't, and what could work better.   Modify your designs to make it better.   Test it out!

Engineering is Elemntary   www.eie.org

Problem Solving Process
(Miss Kelly's Version)

Problem Finding ⇨ **Solution Finding** ⇨ **Solution Using**
(Find It.)   (Solve It.)   (Use It or "Sell It".)

1.   Get to know the whole situation. Read about it, hear about it, think about it, study it, ask questions about it, gather data about it, list the "Problem Family", see it from multiple perspectives, etc.

2.   Choose one problem to solve & describe it well. Select one great, big, juicy problem to solve and write a short but detailed description of it. This is called your Problem Statement.

3.   Brainstorm many, varied, and unique solutions.

4.   Figure out how you will know what would make a good solution?   (Develop criteria.)

5.   Compare your five best solutions & choose one.
            (Use a Decision Making Matrix or another tool.)

6. Use It: Use your solution and solve the problem. If you're not there in person, imagine using your solution and write a detailed description about how your solution "worked".
                                    OR
Describe & Convince: Write a detailed description of your final solution in a way that will convince others to agree that your solution is the best option.

A classroom modification of the Creative Problem Solving model – Osborn & Parnes (1953)
Deirdre Kelly, M.Ed., NBCT   Lake Sybelia Elementary School, OCPS   September, 2012